

## 2007-08 HUNTING SEASONS IN REVIEW

Waterfowl hunting opportunity in Missouri began with the September teal season (9/8-9/23) and continued through April with the Conservation Order. Missouri duck seasons were 60 days in length for the eleventh consecutive year with bag limits the same as allowed according to the federal framework. Duck season timing was similar to recent years, opening in the North Zone the last Saturday in October, the first Saturday in November in the Middle Zone, and the South Zone opening the day after Thanksgiving.

The Canada goose season began with an early season that opened on 29 September to target resident giant Canada geese and a regular season that opened the day after Thanksgiving (11/24). These dates enabled Missouri to offer hunting opportunity that better coincided with the arrival of migrant Canada geese, offer the same season dates statewide, and consolidate the season from three segments into two. The daily bag limit was three birds during the early season and two during the regular season.

In spite of pre-season concerns about habitat conditions due to a summer flood in west-central Missouri, dry conditions in southeast Missouri, and potentially limited pumping capabilities in the Missouri River floodplain, the 2007-08 season turned out much better than expected. Favorable hunting weather, good duck numbers throughout the season, and good habitat conditions in north Missouri resulted in a record year.

**Table 1. 2007-08 waterfowl seasons.**

Table 1-2007-08 Waterfowl Seasons

Zone	Youth Hunt	Ducks	Canada Geese & Brant	White- fronted Geese	Light Geese (snow, blue, Ross's)*
NORTH	10/20-10/21	10/27-12/25	9/29-10/8 11/23-1/30	11/23-1/30	10/27-1/30
MIDDLE	10/27-10/29	11/3-1/1			
SOUTH	11/17-11/18	11/23-1/21			

\*The Conservation Order for light geese will be in effect from January 31-April 30 with no bag limit. Hunters may use electronic calls & unplugged shotguns, & shoot from ½ hour before sunrise to ½ hour after sunset. A valid Missouri Migratory Bird Hunting Permit is the only permit required for residents & nonresidents during this time.

### Weather, Habitat and Migrations:

#### Summer Conditions:

The summers of 2005 and 2006 that were characterized by hot and dry conditions, but conditions changed during summer 2007 when floods occurred in many regions of the state. Flooding in the Osage and Grand river basins in west Missouri, the Missouri River in central Missouri, Nodaway River in northwest Missouri, and the Grand River and others in north-central Missouri affected conditions at Four Rivers CA, Schell-Osage CA, Montrose CA, Fountain Grove CA, Swan Lake

NWR, Eagle Bluffs CA, and Nodaway Valley CA. Wet conditions shortened the growing season for crops and moist soil plants on these areas, and high water affected food conditions on Corps of Engineer reservoirs. Elsewhere in the state, conditions ranged from abnormally dry to moderate drought through August and September. Despite a wet spring, the Bootheel experienced severe to extreme drought conditions later in the year.

#### Fall and Winter Habitat:

October was slightly warmer and wetter than the long-term average throughout the state. Most of the precipitation occurred during the last two weeks of October. These rains helped alleviate drought conditions and set the stage for waterfowl season by flooding shallow water habitat and increasing river levels. Most of the floodable crops and moist soil production was better than expected and ranged from good to fair across the state before waterfowl season commenced. The first of several late October/November cold fronts occurred on 23 October and by late November snow and sub-zero temperatures were reported in states north of Missouri.

On 10 December, a strong storm blew into Missouri bringing ice and snow to the northern two-thirds of the state. This system froze and covered most shallow water habitat in the North Zone with several inches of snow. One week later, on 16 December, another winter storm dropped additional snow across the northern two-thirds of Missouri. This second blast of cold weather froze most shallow water habitat in the Middle Zone. Another front moved through the state on 27 December and brought additional snowfall to northwest Missouri.

Cold temperatures during early January resulted in remaining shallow water areas freezing up statewide, although wetlands in the south thawed quickly and remained open until the 19th and 20th when bitter temperatures returned. The roller coaster of temperature fluctuations continued through much of January. On January 29, warm air preceded a very strong arctic cold front that resulted in temperatures dropping as much as 30°F within an hour of the front passing at many locations. Ice damage and power outages were reported from the southern third of Missouri due to the combination of freezing rain, sleet, and strong winds.

#### Waterfowl Migrations:

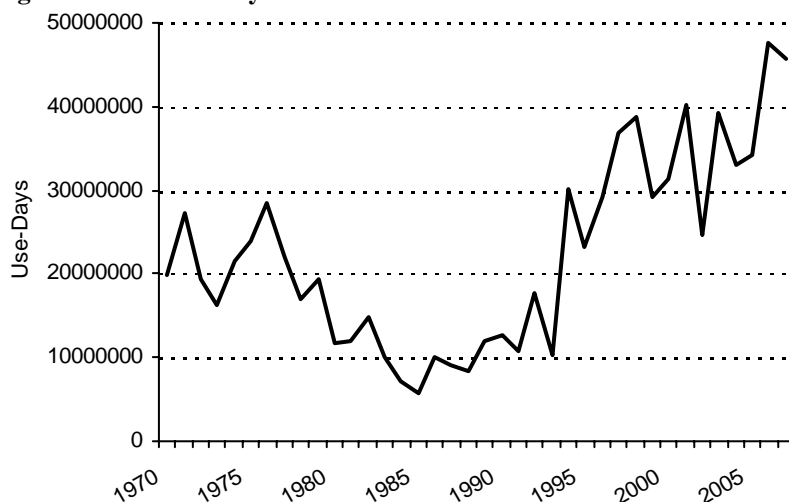
Initial influx of blue-winged teal in August and additional migrations in September were consistent with long-term average migration timing. During the week of 21 October white-fronted geese, early season migrants such as pintail, gadwall, and ring-necked ducks, and the first significant numbers of mallards began arriving in Missouri as most blue-winged teal departed. By the last week of October, 363,900 birds were reported on managed areas, which was the highest count for that period in the past five years. By the first of November ring-necked ducks were the primary diver that had moved into Missouri. No noticeable additional migration events were noted until 21 November, when managers observed diving ducks migrating through the state. Mallard numbers gradually increased through November. White-fronts peaked during the third week of November at 14,830 statewide. The next notable migration event was associated with strong fronts that moved through the Midwest over Thanksgiving weekend (11/25 – 27), and on the first of December. Duck numbers on managed areas peaked across the state at 828,300 birds, and mallards predominated (75-90%). Snow geese numbers also peaked at 539,500 during the first week of December.

The resulting accumulation of snow and ice redistributed and moved birds further south by mid to late December and brought significant numbers of Canada geese into the state. By 10 December few ducks remained in northern Missouri. Canada goose numbers peaked around December 17th. Another major Canada goose migration event corresponded with a strong weather system just before Christmas. A cold front on 27 December resulted in the most significant influx of ducks, especially mallards, into southeast Missouri.

Cold temperatures in late December contributed to lower duck numbers in early January. Participants in the Midwinter Waterfowl Survey (7-11 January) tallied 367,100 ducks, the lowest count in early January in five years. However, this year's numbers were well within the range of the last 20 years (85,700-714,000). Fluctuating temperatures through the remainder of January resulted in additional movements of waterfowl. Managers in southeast Missouri noted the return of the first pintail back from the south when southerly winds prevailed at times in late December and then again during January. Managers in this region also noted a significant migration of snow geese on 21 and 22 January.

A total of 45.6 million duck use days on MDC areas was similar to the record of 47.6 million recorded during 2006, and was well above the long-term average. High duck numbers in the North Zone (54% above the 5-year average) contributed to this large number. Duck use in the Middle and South zones was near the 5-year average.

**Figure 1. Duck Use-days on State and Federal Wetland Areas in Missouri, 1970-2007.**



### **Duck Harvest:**

Estimates of duck harvest are based on two sources, the U.S. Fish and Wildlife Service (USFWS) National Waterfowl Harvest Survey and the Missouri Department of Conservation Waterfowl Post-Season Harvest Survey. Typically, USFWS estimates and MDC's post-season harvest estimates are similar (see Appendix A), and in the past we only reported the USFWS estimates. Beginning in 2002, the U.S. Fish and Wildlife Service implemented a new survey methodology and their preliminary estimates vary somewhat from MDC's post-season survey estimates, so in Table 2 we now report both estimates.

**Table 2. Missouri duck harvest (USFWS and MDC Harvest Survey Data).\***

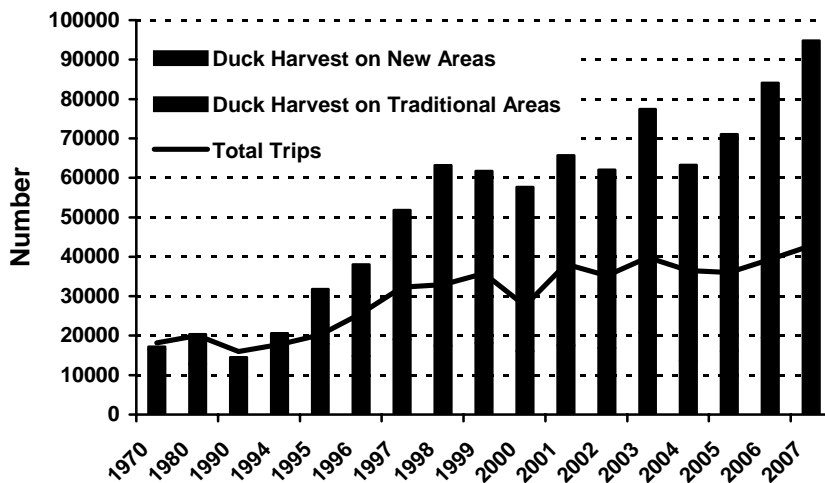
Year	North Zone *	Middle Zone	South Zone	USFWS Estimate	MDC estimate
1981-84	122,200 (52.5%)	96,500 (41.5%)	13,900 (6.0%)	232,600	
1985-87	86,200 (49.3%)	82,400 (47.1%)	6,400 (3.6%)	175,000	
1988-93	55,900 (53.5%)	43,000 (41.2%)	5,500 (5.3%)	104,400	
1994-96	109,900 (55.7%)	74,800 (37.9%)	12,500 (6.3%)	197,200	
1997	186,800 (51.0%)	142,200 (38.8%)	37,200 (10.2%)	370,400	378,100
1998	239,600 (52.3%)	167,100 (36.5%)	51,700 (11.3%)	469,900	414,900
1999	200,700 (62.2%)	79,700 (24.7%)	42,200 (13.1%)	348,200	400,100
2000	256,500 (56.8%)	98,600 (21.9%)	95,700 (21.2%)	404,000	446,800
2001	277,100 (60.1%)	114,500 (24.8%)	69,500 (15.1%)	513,000	445,900
2002	74,700 (34.4%)	129,500 (59.6%)	13,100 (6.0%)	208,000	392,600
2003	156,600 (37.1%)	236,800 (56.2%)	28,100 (6.7%)	433,700**	472,000
2004	133,700 (41.7%)	154,500 (48.2%)	32,600 (10.2%)	322,700**	396,000
2005	146,600 (32.9%)	255,700 (57.4%)	43,600 (9.8%)	447,700**	426,100
2006	158,300 (41.5%)	188,800 (49.5%)	34,600 (9.1%)	383,500**	570,600
2007	Data not available	Data not available	Data not available	414,227**	627,298

\* 3 zones since 1991. Zone totals will not equal statewide total. The zone estimates are based on weights that include early season teal harvest. The statewide total excludes early season teal harvest.

\*\* data are preliminary

Numbers of hunters participating in the 2007-08 duck season (38,792 vs. the 2001-05 average of 29,000), trips per hunter (7.1 vs. 2001-05 average of 7.7), and average daily success (1.91 vs. 2001-05 average of 1.80) combined to result in a 2007-08 duck harvest of 414,227 (627,298 MDC estimate), compared to 383,500 (570,600 MDC estimate) in 2006-07. The USFWS estimate of 414,227 is within the range experienced during the past 11 years of liberal seasons (217,300 – 515,100). Based on the MDC data, the 2007-08 estimate of 627,298 ducks exceeded the previous record harvest of 570,600 set in 2006.

**Figure 2. Numbers of ducks harvested on Missouri Department of Conservation areas.**



Traditional areas = Fountain Grove, Montrose, Duck Creek and Schell-Osage CAs

On Department areas, hunters took 42,786 trips, which exceeded the previous record of 39,500 trips established in 2003. Hunters harvested 94,778 ducks, exceeding the previous record of 84,100 ducks harvested on MDC areas during 2006-07. The daily average of 2.22 ducks per hunter was also a record, slightly

surpassing the previous record of 2.14 ducks per day set last year. Only a small portion of the statewide harvest occurs on Department areas. The relationship between public area harvest and statewide harvest in 2007-08 (15.1% of a statewide total of 627,298) was similar to the average of 14.4% (range = 12.4-16.5%) from 1988-1997. During dry years, Department areas with water pumping capabilities typically account for a higher proportion of the duck harvest than during wet years. For example, in 1999-00 (a dry season) 19.1% of the harvest occurred on public areas compared to only 13.9% during the wet fall of 1998-99.

Periods of peak harvest vary depending on weather, migration timing, and habitat conditions (Appendices C-E). For example, Middle and South Zone hunters missed out on the Halloween migration event in 2006, on one of the largest migration events in recent years (Figure 3 and Figure 4). The previous season the most significant migrations did not take place until later in November (15<sup>th</sup> and 29<sup>th</sup>). In 2007-08, the population build-up was gradual without any migration events that would have compared to those during the previous two years.

Figure 4. Duck harvest per day by 5-day periods, 2005-06.

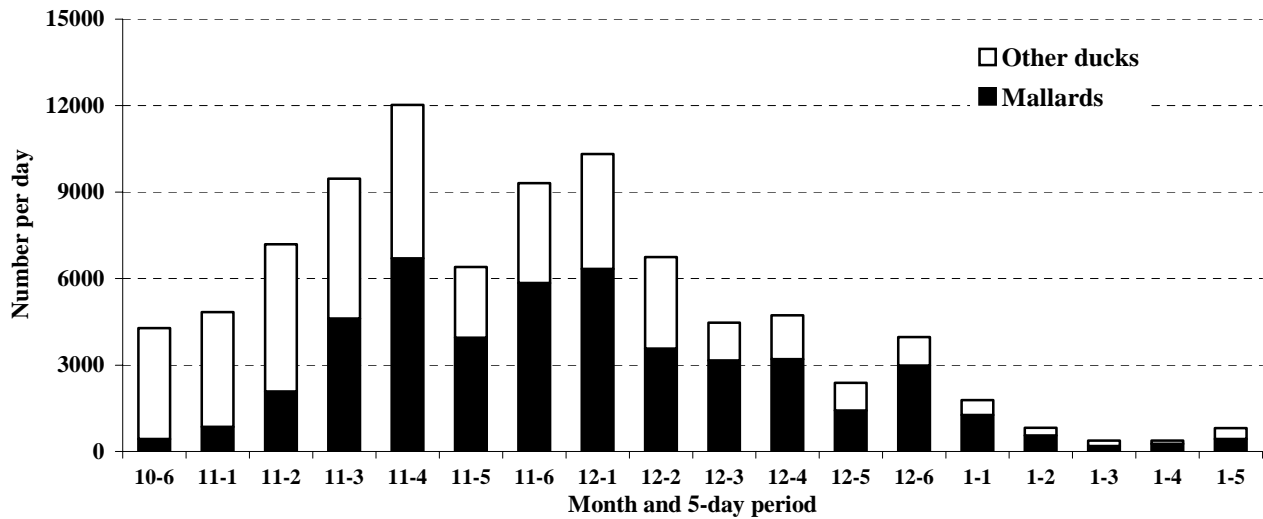
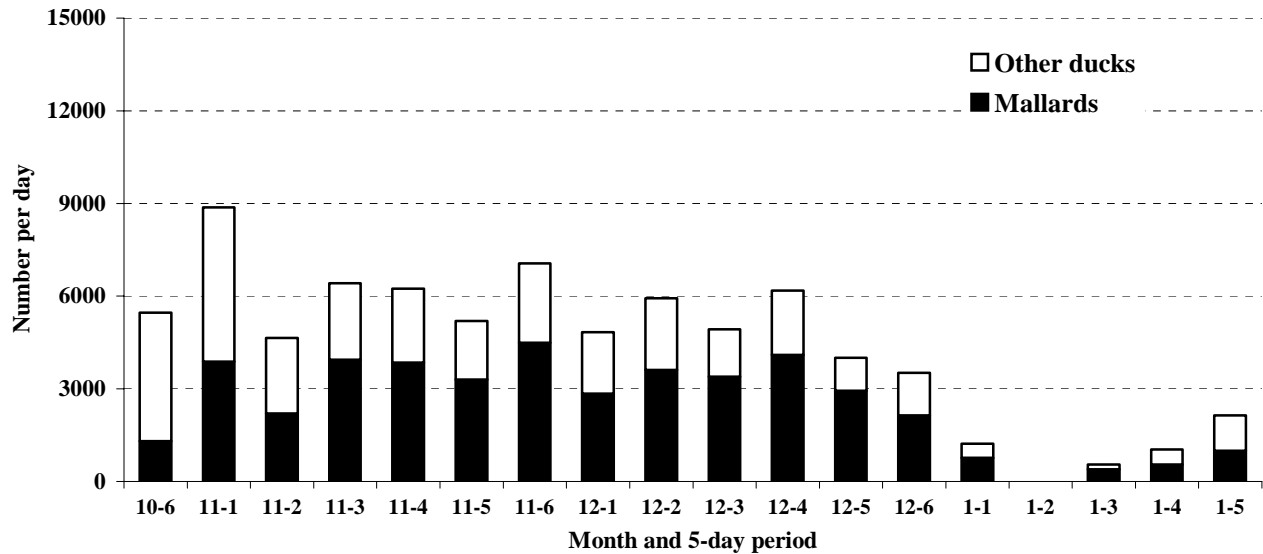


Figure 3. Duck harvest per day by 5-day periods, 2006-07



### Canada Goose Harvest:

Last year marked the second year of a three year experiment (2006-2008) to test the hypothesis that giant Canada goose harvest will buffer EPP Canada goose harvest. In this experiment, Missouri was allowed to offer more Canada goose hunting opportunity, especially during the periods when migrant Canada geese are likely to be present. During 2007-08, similar numbers of individuals (15,162) hunted geese compared to 2006-07 (15,100) and harvested about the same number of Canada geese (63,467 in 2007 vs. 58,600 in 2006, MDC estimates, Table 3). Including the years 1990-2007, last season's harvest was second only to 2000 (76,300).

**Table 3. Missouri Canada goose harvest (USFWS and MDC Harvest Survey Data).\***

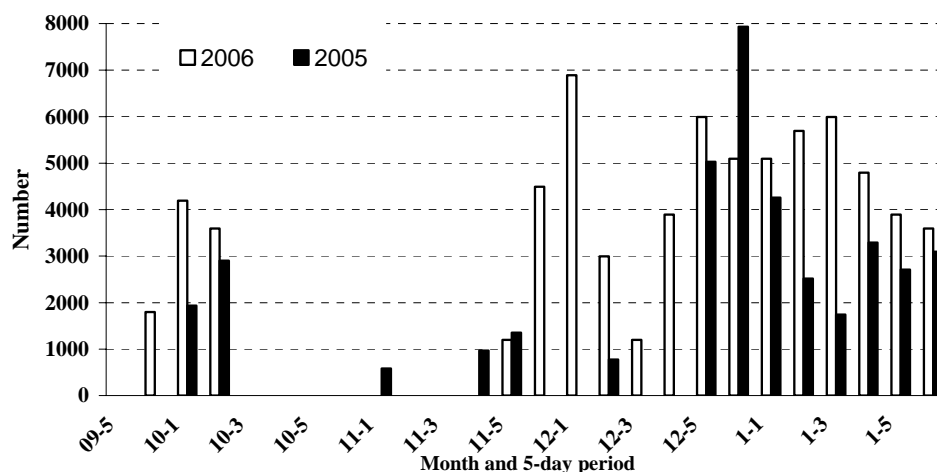
Years	Swan Lake Zone	Southeast Zone	North Zone	Middle Zone	South Zone	USFW estimate	(MDC estimate)
1970-74	35,100 (81.0%)	1,900 (4.4%)	4,900 (11.3%)	900 (2.0%)	500 (1.2%)	43,300	
1975-79	52,700 (78.7%)	6,500 (9.7%)	4,200 (6.3%)	2,800 (4.2%)	700 (1.0%)	66,900	
1980-86	27,900 (71.4%)	2,400 (6.1%)	4,400 (11.3%)	4,100 (10.5%)	300 (0.8%)	39,100	
1987-89	18,000 (58.8%)	1800 (5.9%)	3,000 (9.8%)	5,800 (19.0%)	2,000 (6.5%)	30,600	
1990-92	11,100 (36.6%)	4,700 (15.5%)	7,600 (25.1%)	6,600 (21.8%)	300 (1.0%)	30,300	
1993-96	6,900 (15.0%)	7,200 (15.8%)	22,000 (48.3%)	8,500 (18.5%)	1,100 (2.4%)	45,700	
1998	300 (1.2%)	2,300 (9.3%)	13,800 (56.1%)	1,600 (6.5%)	6,600 (26.8%)	24,600	37,400
1999	700 (2.0%)	2,400 (6.8%)	21,200 (59.7%)	6,100 (17.2%)	5,100 (14.4%)	34,600	39,800
2000	1,700 (3.6%)	4,500 (9.6%)	26,800 (56.9%)	7,000 (14.9%)	7,100 (15.1%)	43,800	76,300
2001	3,100 (4.7%)	0	43,400 (64.3%)	16,000 (23.8%)	5,000 (7.3%)	64,900	43,900
2002	3,300 (13.1%)	274 (1%)	14,500 (57.6%)	4,900 (19.5%)	2,200 (8.7%)	23,500	44,000
2003	--	--	--	--	--	18,500**	56,400
2004						8,800**	39,500
2005		387 (1.0%)	24,000 (61.3%)	12,961 (33.2%)	1,741 (4.4%)	39,300**	51,800
2006			37,200 (53.2%)	30,000 (42.9%)	2,697 (3.9%)	70,400**	58,600
2007	-	Data not available	Data not available	Data not available	Data not available	42,158**	63,467

\*The Swan Lake Zone was eliminated in 2004 and a statewide goose season was established in 2006. \*\* Data are preliminary



Prior to 2006, Missouri could only provide goose hunters with 40 days of opportunity during December and January in the North and Middle Zones. Figure 5 compares the harvest between 2005, a year with more restrictive regulations, and 2006, the first year of the experiment.

**Figure 5. Canada goose harvest by 5-day periods in 2005 & 2006 (FWS Harvest Survey).**

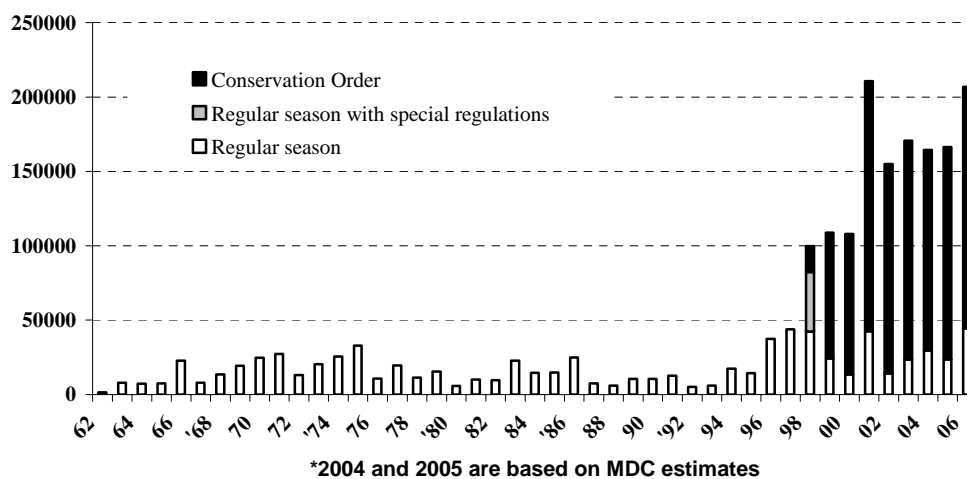


It appears that hunters have benefited from having more days to hunt Canada geese later in the season as evidenced by periods of peak harvest in December and January during 2006-07.

### Light Goose Harvest:

More liberal light goose hunting regulations after the mid-1990s, and the availability of a Conservation Order (CO) beginning in February 1999, has resulted in a dramatic increase in the harvest of light geese in Missouri. About 8,000 hunters participate annually in the CO in Missouri and average about

**Figure 6. Missouri light goose harvest: 1962-2006.**



40,000 days hunted. This is comparable to the total number of days hunted on MDC areas during the regular waterfowl season. The total light goose harvest in Missouri increased from an average of 16,535 during the 10 years prior to the CO (1988-1997 regular season) to an average annual harvest since 1998 of 153,956 (regular season plus CO), a 9 fold increase (Figure 6). A grand total of over 1.3 million light geese have been harvested in Missouri during the past 9 years. During the 2007-08 regular season, 6,443 hunters harvested 64,015 light geese, the highest number in recent years.



**White-Fronted Goose Harvest:**

The Mississippi Flyway white-fronted goose harvest has nearly doubled from an average of about 65,000 during the early 1990s to over 159,000 during 2006-07. Over 90% of this harvest typically occurs in Louisiana and Arkansas. In Missouri, the harvest of white-fronted geese is low and unpredictable with the majority of harvest occurring in southeast Missouri during late season. In the last 8 years, the harvest of white-fronted geese in Missouri has ranged from undetectable levels to more than 5,500.

